Heavy Metal Contamination in Community Gardens

A study about community gardeners' behavior and exposure to heavy metals

What did we want to know?

What factors influence community gardeners' behavior related to soil contamination?

Why did we want to know it?

Community gardens have many benefits and are increasingly popular.

Garden soil may contain heavy metals that can potentially harm health, especially children's.

Gardening behaviors such as soil testing, mulching, composting, and handwashing can help minimize risk.

What did we do?

We assessed factors driving gardeners' behaviors such as beliefs, attitudes, perceptions, perceived social pressure, and barriers/facilitators by:

1. Conducting 5 focus group discussions with 26 Atlanta community garden leaders.
2. Giving a questionnaire to 500 community gardeners across the U.S.

What did we find?

Among Atlanta community garden leaders:

"If you know what's there, it lets you know if there's a problem that you might want to deal with in terms of heavy metals and pesticides"

- Positive attitudes toward heavy metal soil testing and handwashing.
- Heavy metal contamination was not seen as a common gardening risk.
- Gardening peers, government agencies, universities, and advocacy organizations influence safe gardening behaviors.
- Awareness, cost, accessibility, skepticism, liability, and interpretation of results were barriers to heavy metal soil testing.

"Gardening is such a great way to bring people together from all different cultures and socioeconomic levels.... we have people from all sections of the community that come and garden together"

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What did we find?

Among gardeners across the US:

- About half did not know if their garden was near older structures with lead paint.
- Over half said that children are often present in the garden.
- Most indicated that they did not use pesticides in their garden.
- Attitudes, social pressure, and perceived control affect whether they test soil and wash hands.

What does this mean for you?

For community gardeners



To maximize the benefits of community gardening, it's important to practice good habits (e.g., heavy metal soil testing and hand washing)

These habits are particularly important in gardens located where contaminants may be present and in gardens that engage children.

For community garden partners:



Partners (e.g., government agencies) should address gardeners' beliefs, attitudes, and perceptions when promoting safe gardening behaviors.

Organizations that provide services to community gardens should consider offering free or low-cost soil testing and guidance on next steps if contaminant levels are high.

Remediation and other tips

Get more information about gardening in urban soils at:

https://bit.ly/2o4RB15

1. Know the site history of your garden and be aware of sources that could introduce contaminants.
2. Get your soil tested for pH, nutrients, and heavy metals.
3. Consider using gloves when gardening.
4. Be sure to practice handwashing after gardening.
5. If heavy metals are present in garden soil, add clean soil, use raised beds, or plant certain flowers such as sunflowers.

This infographic is a summary of the dissertation of HERCULES doctoral trainee Candis M. Hunter: Behaviors to Reduce Heavy Metal Soil Contaminant Exposures among Community Gardeners

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